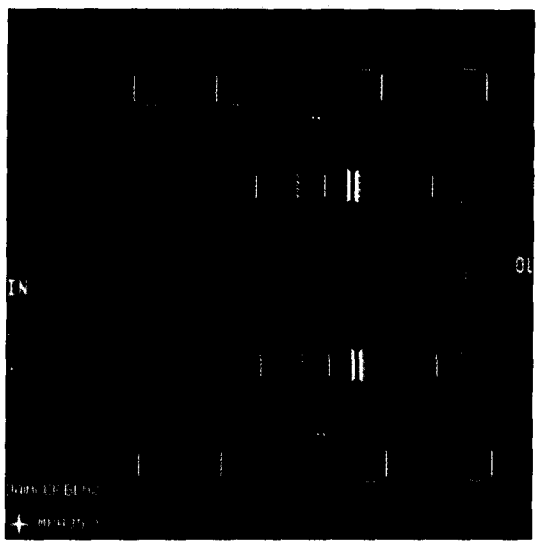
Device News



Daimler-Benz radar sensors

Radar sensors bought down to size

High-frequency circuits suitable for large-scale manufacture radar sensors are being brought down to size — by Daimler-Benz Researchers in Ulm Germany. The team has fabricated the amplifier shown here: A GaAs HF MMIC for radar sensors cost-efficient, compact and reliable systems suitable for manufacture in large quantities. The high amplification and power output of these HF circuits allows radar signals to be generated and information to be transmitted over a few dozen kilometres on a broad-band basis.

Materials News

R-P suspends GA extraction at Pinjarra

In early May, Rhône-Poulenc suspended its gallium extraction activities at its Pinjarra facility in Western Australia.

The company say that after enjoying a period of strong growth in 1994 and 1995, the gallium market has not continued to expand as expected, particularly in Japan where demand has weakened:

- Decline in demand for gallium in its principal market, the LEDs has not been offset by the stronger demand for ICs;
- The applications for gallium used as an alternative to mercury still remain extremely limited, notably in the area of dental analgams;
- Gallium's potential in industrial catalysts has not yet been established.

At the current level of demand, Rhône-Poulenc says it is fully capable of meeting its customers' demand for several years to come, thanks to its stocks and its production at Stade (Germany) and Salindres (France).

The "mothballing" of the Pinjarra unit, implemented in the best technical conditions, will make it possible to recommission it in a short space of time as soon as justified by the market.

Company News

AEA's green scrubbers help semiconductor industry

AEA Technology at Harwell, UK, is developing its power fluidics gas scrubbing technology to help the semiconductor industry improve its environmental performance by reducing emissions to the atmosphere.

As well as achieving excellent results in emission abatement, power fluidics has a number of other key advantage over traditional abatement technologies such as packed columns.

Firstly, the technology is based on the gas-liquid contactor, a device that can give the same mass transfer performance as a traditional packed column but which is only a fifth of the volume and requires no packing.

Secondly, the type of chemicals used in the production of semiconductors, which include, volatile organic compounds (VOCs), acids, OMs and organosilicons, means that wafer fab gas abatement facilities are often highly toxic or aggressive environments. Gases such as HF, HCl, HBr etc. and silicon tetrachloride and many others are easily removed to TA Luft values within power fluidics scrubbers.

The exhaust gas enters the flat circular chamber of the contactor through a series of vanes evenly placed around the chamber rim. The gas follows the circular contour of the chamber and moves inward towards an outlet port on the central axis of the chamber. As the rotating gas stream moves towards the centre outlet, the tangential velocity increases as a consequence of angular momentum, reaching velocities as high as 15 m/s. A radial diffuser on the gas outlet minimises gas pressure drop. Simultaneously, the liquid phase is sprayed into the centre of the chamber, forming droplets which fly out towards the periphery, thus contacting with the rotating gas and cleaning it before it is discharged to the atmosphere.

The gas-liquid scrubber is ideal for handling systems which contain solids or are prone to crystallisation. This is due to self-cleaning mechanisms of the gas vortex and liquid spray which eliminate stagnation zones within the vortex chamber.

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